



RESULTS FROM ETHNOGRAPHIC STUDIES ON THE CONTROL OF ACUTE RESPIRATORY INFECTIONS IN BOLIVIA

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I. INTRODUCTION

This chapter summarizes the results of ethnographic studies conducted in Bolivia and their impact in the framework of the agreement established in 1989 (between the Ministry of Welfare and Public Health of Bolivia, UNICEF, and The Johns Hopkins University in Baltimore) to strengthen the Programmes for Control of Acute Respiratory Infections (ARIs) in Bolivia, Gambia, and Thailand.

These countries hosted a series of activities geared toward investigation of particular areas concerning traditional skills and knowledge, attitudes, and practices regarding ARIs, and the interpretations of communities and families regarding the signs and symptoms corresponding to serious diseases such as pneumonia. The scope included people's understandings of the options that medical science offers through available health services, the limitations on understanding recommendations from health personnel on the care of a sick child at home, and the use of medications.

The investigations were based on a protocol drafted by PAHO/WHO, Focused Ethnographic Study (FES) for ARI, for use in three communities in Bolivia. These were: Quwari, a Quechua community of 180 households in the department of Cochabamba; Jayuma Llallagua, an Aymara community of 63 households in the department of La Paz; and an urban area on the outskirts of the city of El Alto de La Paz, with 194 female-led households.

One of the general objectives of FES in Bolivia was to identify the terms used locally by the mothers to describe the respiratory diseases of their children and to determine whether they recognized the key symptoms of pneumonia. In particular, the study focused on formulating recommendations for the National ARI Programme and on how to improve the communication between health-care providers and the mothers with regard to ARI and the treatment thereof.

II. METHODOLOGY

The ethnographic study on ARI was oriented in terms of methodology by the protocol proposed by PAHO/WHO. The qualitative and quantitative procedures used during the 6 to 8 weeks included open- and closed-ended structured interviews.

In each of the communities planning was coordinated with the mothers' clubs and other women's groups, community authorities, and, in the case of El Alto de La Paz, the local health unit.

The fieldwork took place over a six-week period in which 11 different procedures were adapted to the community for specific purposes. The interviews were conducted to determine the perception of the signs, symptoms, causes, and treatment of the diseases that led to the death of children in the communities under study. In addition, interviews were held with several types of health-care providers, including those at private clinics, public health workers, traditional healers, sellers of drugs, and pharmacists. Hypothetical cases were proposed to drug vendors and pharmacists in order to investigate their diagnoses and practices with medical prescriptions.

The results of all these inquiries are summed up in the tables, corresponding to the three communities under study, in the appendices of this chapter. Among the tables are an explanatory model, a breakdown of clinical signs with local expressions and vocabulary, and a listing of advice for household care of children with cough.

III. STUDY RESULTS

The analysis of the data from the ethnographic studies includes explanatory models of respiratory diseases that were constructed to represent community perceptions of the diseases and their signs, symptoms, and the treatment they receive.

On the basis of the local explanatory model, the relationship between the beliefs of local groups and the knowledge of clinical pneumonia was studied. In general, mothers are advised to seek out services from qualified providers when their children have accelerated respiration or difficult breathing, when they cannot drink liquids, or when their condition worsens.

Health workers must be able to communicate effectively with the mothers to indicate which signs must be looked for and when their children must return for specific treatments; therefore health workers need to know how mothers perceive and refer to these signs. The studies conducted in Quwari, Jayuma Llagua, and El Alto de La Paz were intended to respond to a number of questions about ARI management in children, such as:

- Do mothers recognize accelerated breathing; do they assign a different name for it?
- Do they know this is a sign of serious disease?
- What signs do they pay closest attention to?

The following sections describe the explanatory models of the mothers in Quwari, Jayuma Llallagua, and El Alto de La Paz.

a) The Quwari community

The mothers of Quwari recognize seven different symptoms and signs of ARI. Although these are considered to be different diseases, they also represent different degrees of severity in the process of disease. The perceived causes included natural and supernatural influences, which are not mutually exclusively. For example, a mild disease may be attributed to a child's exposure to cold, even though a child's failure to respond to the usual treatments may be the basis for attribution to a supernatural cause.

a.1) *Rumarisu*

According to the mothers of Quwari, *rumarisu* is one of the most common symptoms and is generally considered mild. However, in newborns and very young infants it can be severe and cause death a few days after its appearance. By contrast, in children 2 years and older, mothers consider the disease as *pasallan* (brief) and do not seek treatment. The symptoms characteristic of *rumarisu*—sneezing, stuffy nose, nasal discharge, fever, and listlessness—are those of the common cold. The following Quechua terms are examples of the clinical findings of *rumarisu*:

- *achbis achbis ninku*—they say achoo, achoo (sneezing);
- *sinqanmanta qbuña mana sayanchu*—he/she cannot hold back his mucus;
- *k'ajan*—he/she is feverish;
- *mana valorsitun kanchu*—he/she has no spirit or strength.

a.2) Flu

Mothers consider flu as a more complicated level of *rumarisu*. They describe it as *rumarisu* that has become aggravated and presents hoarseness, sore throat, and diarrhea. As with *rumarisu*, it is considered severe* for children under 1 year and mild to moderate* for older children (* indicates subjective criteria of classification). The following are some of the terms included in the descriptions of this complication:

- *k'ajan*—his/her skin is burning;
- *ansaqin*—he/she is panting;
- *rumarisu*—catarrh;
- *kusiyanku*—diarrhea;

- *kumkitan k'aran*—his/her little neck is hot;
- *calorwan kanku*—he/she has fever.

a.3) *K'aja unquy*

The main symptom of *k'ajay unquy* is a high body temperature in conjunction with accelerated breathing. In young children, severity is manifested by “dry mouth” and “little bumps” that often erupt in the mouth. Older children present fever and accelerated breathing. If not treated, chronic cough and relapse may result, which is a concern to the mothers because treatment is then more difficult. Some associated terms are:

- *simisitun ch'akin*—the little mouth dries out;
- *k'ajan*—he/she has a temperature;
- *calorwan kanku*—he/she has fever;
- *ansaqin*—he/she is panting.

a.4) *Ch'uju unquy*

This disease usually appears in children over 1 year of age and is associated with supernatural causes, such as *mancharisqa* (a fear caused by the separation of the child's soul from his or her body), *ayasqa* (disease produced by the presence of dead animals), and *pachamama* or “Mother Earth” (who takes away the child's soul when he or she sleeps in an unknown place, is left alone and unprotected, or cries outside his or her customary environment). The signs and symptoms most often observed are high temperature and the presence of cough. On occasion, the respiratory diseases are accompanied by diarrhea. The related descriptive terms for this disease are:

- *kunkitan k'aran*—his/her little neck is burning;
- *k'ajan*—he/she has a temperature;
- *libre ansaqin*—he/she is panting more;
- *vómitos*—vomiting;
- *ch'uju apuran*—harsh coughing;
- *calorwan kanku*—he/she has fever.

a.5) *Coqueluche*

This disease is a source of tremendous concern to the mothers. When it presents with nasal hemorrhaging, it is attributed directly to supernatural causes such as *pachamama*. However, only in the most exceptional cases does it reach such extremes in the community; and when it does, the mothers believe it is the fault of a mother's neglect. Some of the related terms are:

- *k'ajan*—he/she has a temperature;
- *aswanta ch'ujunku*—bigger and harsher cough;
- *vómitos*—vomiting;
- *libre ansaqin*—he/she is more anxious;
- *kunkitan ansaqin*—his/her little neck is hot;
- *tuta mana puñun atinkuchu*—he/she can't fall asleep at night;
- *tusiqanpi chínyaparin*—he/she coughs and stays quiet.

a.6) *Tuku Uju*

This disease presents aggravated coughing, which precipitates “brief syncope,” “stretching backward,” and “purple coloring of the skin.” In these cases, the mothers are certain that the children can be cured only through “symbolic” treatments.

- *killillata wijch'ukun*—they faint and turn purple;
- *kasqallampi ujllata estirakun*—they stretch suddenly;
- *kájan*—he/she has a temperature;
- *ch'uju apuran*—frequent coughing;
- *tusiqanpi ch'inyaparin*—he/she coughs and stays quiet.

a.7) *Cb'aki Uju*

This name means dry cough; it is also known as *pulmón unquy* (lung disease). In the mothers' opinion, this is the only disease that presents chronic coughing without accelerated breathing or fever, and tends to be quite prolonged. It frequently presents in adults and children over 3. The following terms designate some of the characteristic signs and symptoms:

- *q'iya bolasta thukamun*—the child spits balls of phlegm;
- *kunkitan k'aran*—his/her little neck is hot;
- *ch'uju apuran*—frequent coughing;
- *aswanta ch'ujunku*—very strong cough.

a.8) Relationship of diseases, signs, and symptoms to clinical pneumonia: Quwari (see Table 2)

Interviews were conducted and recorded on video in which children were shown with different signs and symptoms of ARI, and other interviews were conducted in clinics to determine the relationship between the local terminologies and actual physical signs. Table 2 shows the key physical signs and symptoms designated by the mothers of Quwari.

b) Community of Jayuma Llallagua

The mothers of Jayuma Llallagua recognize five different diseases with characteristic signs and symptoms of ARI. Just as the mothers of Quwari, the mothers of Jayuma Llallagua also believe that ARI symptoms may arise from supernatural as well as natural causes (cold air, cold water, contagion, sudden changes in temperature).

Thayan pasjata or “touched by cold” refers to a cold or catarrh arising from dampness and cold and brought on by insufficient clothing or exposure to a cold air current, rain, wet diapers, playing in cold water, or ingestion of cold liquids. This kind of cold may be limited to a particular area of the body such as the lungs, chest, throat, or head, and it may begin with inflammation. The diseases attributed to natural causes include *pisti*, *ch'uxu*, *kustipa*, and *k'aja ch'uxu*.

b.1) *Pisti*

Pisti is equivalent to gripe or catarrh, essentially presentation of stuffy nose, headache, mild cough, and slight fever. It is considered a mild illness and is no cause for great concern, occurring as it does naturally. Just the same, if not relieved in an opportune fashion, it may worsen and lead to *ch'uxu*, *kustipa*, and *k'aja ch'uxu*. Among the terms used to describe the signs, we find:

- *jach'is jach'is jurmaniw*—sneezing with mucous discharge;
- *p'iqui usu*—headache;
- *tumpa calentura*—a slight fever;
- *aliq ch'uxu*—common cough.

b.2) *Ch'uxu*

Ch'uxu can be considered as a more severe stage of *pisti*. This disease presents considerable dry cough and higher fever, although it is not associated with accelerated or difficult respiration. Characteristic signs include:

- *manqba calentura*—increased body temperature;
- *mallq'a ch'ajantata*—hoarseness or sore throat;
- *pisti*—catarrh;
- *janiw ñuñxiti*—will no longer breast feed;
- *janiw ch'uxsuñ puedxiti*—cannot cough.

b.3) *Kaja Ch'uxu*

Kaja ch'uxu is characterized by persistent dry cough, high body temperature, and accelerated and difficult respiration. A strong cough leads to a general state of exhaustion as a result of the sustained effort that the cough requires, thereby preventing normal breathing. In the most severe cases, this situation may lead to fainting. When the *k'aja ch'uxu* reaches the most severe stage, the result is *qburqbuski* (acute hoarse-

ness), *ayquski* (whining and wheezing), and *aras* (wheezing with drooling), which in combination precipitate an irreversible situation. Among the signs corresponding to *k'aja ch'uxu* are:

- *k'aj k'aj ch'uxsusa muraduk tuku*—he/she turns purple from coughing;
- *wal samaqi*—he/she is panting;
- *walja manqba calentura*—high body temperature;
- *wilamp ch'uxuni*—coughs up blood;
- *janiw sum samsuniñ puedxiti*—cannot breathe well.

b.4) *Kustipa*

Kustipa has several symptoms in common with *k'aja ch'uxu*, but differs in that the patient cannot cough. As a result, the patient becomes congested and may present nasal hemorrhaging due to “lesions” of the *cuyma* (lungs). The mothers indicate that there is also a characteristic sound like that of an “old can.” Among the causes cited are the sun, water, cold wind, and smoke, but these causes are superimposed on existing diseases or manifest symptoms, so *kustipa* may be considered as an aggravation or relapse from other underlying respiratory diseases.

- *wilamp ch'uxuni*—coughing up blood;
- *nasat willaw sari*—nose bleeds;
- *janiw sum ch'uxsunxiti*—cannot cough well;
- *raukiw samanix*—rapid breathing.

b.5) *Saxra*

The disease known as *saxra* does not present a physical or corporal problems; rather, it is attributed to supernatural or “extra-human” origins. The belief is that some type of spirit comes to claim the life of a newborn child and uses a phenomenon of nature or some physical element (wind, water, an evil spot, among others) to unleash a series of symptoms that bring on an abrupt reaction that can take away the child’s life within a matter of hours. In its terminal stage, the disease appears similar to *k'aja ch'uxu*, but without time to present either *ayquski* or *qburbuski*. The patient may immediately suffer an attack of *aras*. The mothers concur in noting that an unambiguous sign of this disease are purplish-brownish stripes that appear on the child as if he or she had been whipped. Other signs of *saxra* include:

- *lakapax muraduki tuku*—the mouth turns purple;
- *manqba calentura*—high fever;
- *ratakiw samanix*—accelerated respiration;
- *pichupaw pharaqí*—the chest heaves;

- *ayajumpi*—in the throes of fright;
- *ch'uxña which'uchu (kursiya)*—green diarrhea;
- *ch'uxu*—cough.

b.6) Relationship of the diseases, symptoms, and signs to clinical pneumonia: Jayuma Llallagua (see Table 5)

To determine which diseases, signs, and symptoms described by the people of Jayuma Llallagua correspond in whole or in part to clinical pneumonia, interviews were conducted in clinics and the community. The community interviews were filmed with video cameras and with children taking part, who showed different signs and symptoms of ARI.

c) City of El Alto de La Paz

The city of El Alto de la Paz, which has grown up on the mountainous southern rim of the Bolivian capital of La Paz, is home to a diverse population, the majority of whom immigrated from Aymara communities and settled there several years ago. The remainder of the inhabitants are urban middle class, mainly families of resettled former miners and former immigrants of La Paz proper, with well-established housing.

The investigation conducted with the mothers of El Alto de La Paz identified expressions to designate five diseases and 22 signs or symptoms of ARI, as well as causes and treatments. These terms were later confirmed and expanded on in subsequent interviews. It was evident from the start that few terms were readily used to designate the diseases and signs in relation to naturalistic beliefs, owing to the natural propensity to transfer the native terms into Spanish. The recognized diseases are cough, fever, *k'aja ch'uxu*, cough with gripe, and *coqueluche*.

c.1) Cough

Several kinds of cough mentioned are subsumed into this one category. For example, the informants mentioned the “sun cough” and the “cold cough,” so named because of their attributed causes; the “cough with blood,” “dry cough,” and “phlegmatic cough,” which designate signs and symptoms or the degree of severity associated with the disease. Some of the other most frequent signs are listed below:

- audible throat;
- inflamed throat;
- spitting phlegm;
- stopped-up throat;
- sunken chest.

c.2) Fever or temperature

This is an ambiguous disease in that it is as often as not presented as a symptom of other diseases. Some of the mothers seem to differentiate between “fever” and “tem-

perature,” whereas others use both terms interchangeably. The signs and symptoms mentioned in reference to these terms are very similar and so have been listed as if for a single category. The following are the five most commonly mentioned:

- fever;
- burning breath;
- strong breathing;
- he/she is moving the belly;
- it is as if he/she were swallowing air.

c.3) *K'aja ch'uxu*

This Aymara term literally means “disease of cough and fever” and is known by the mothers under other names such as *k'aj k'aj* and *k'aja usu*. The preference here for *k'aja ch'uxu* is based on a description of both the cough and fever aspects of the disease. The mothers will use the Spanish term for cough (tos) to describe the disease or will say “cough with *k'aja*” (“cough with fever”).

- silenced by cough;
- strong cough;
- turns purple;
- *bas arasa*;
- *paletilljata* (sunken chest).

c.4) Cough with grippe

The mothers regard this condition as the most common and least severe and will say, “It just goes away.” Just the same, the disease can be severe in newborn infants. Stuffy nose or *t'isi* is the most common sign, although it is also called “cough with a cold.” Watery mucus is common, along with headache. Sometimes the cough can bring on complications such as inflammation of the throat. Generally, the disease causes body discomfort, so the children cry. The most frequently associated terms are:

- with mucus;
- cough;
- stuffy nose or *t'isi* (dry mucus).

c.5) *Coqueluche*

Few of the mothers reported this disease. However, it is noted because of the specific signs of pneumonia that present with it. The mothers associate it with *k'aja ch'uxu* because of the persistent cough. They will also say, “His or her chest hurts,” and “*ayquski*” because of the patient’s efforts to cough, which sometimes brings on vomiting. The sign that “he or she can no longer breathe” is the only one that specif-

ically refers to difficult breathing and is observed in children who “swallow air,” indicating scarcity of oxygen. The clinical signs most frequently found are:

- “his/her chest hurts”;
- vomiting;
- “he/she won’t breathe”;
- *ayquski* (groaning with constant pain).

IV. USE OF ETHNOGRAPHIC RESULTS

It is expected that the results of the ethnographic studies will be useful in developing a program for ARI control. This kind of research should provide program professionals with recommendations for appropriate communication with the mothers of young children, particularly in terms of household care for a child with a cough or respiratory difficulty. In addition, by identifying factors that facilitate or impede the immediate search for a trained caregiver for standard management of pneumonia or other ARI cases, these studies may assist the ARI program in gearing its efforts accordingly.

In Bolivia the results of this ethnographic study were used in the formulation of general recommendations proposed by PAHO/WHO for household care and listed in the treatment tables of the publication *Control and Management of Children with Cough or Respiratory Difficulty*. In short, these recommendations urged that children continue to be fed, that their intake of liquids be increased, throat pain assuaged, and cough relieved by using appropriate techniques, and that a trained care-provider be sought if the child presents accelerated or difficult breathing, if the child cannot ingest liquids, or if his or her general condition worsens rather than improves.

The most important sections were those that dealt with the local terms used to describe signs and symptoms of pneumonia, such as those appearing in the appendices of this chapter. Furthermore, household remedies such as herbal teas of the mate herb for coughs and fevers were promoted, and harmful practices, such as using kerosene indoors and melted mentholated poultices, were discouraged.

Certain beneficial practices were already widespread in the community—e.g., continuing to feed the sick child, increasing liquid intake, keeping the child well covered, and cleaning the child’s nose should congestion impede feeding. Thus, these communities did not require particular emphasis on these aspects; rather, efforts for health education had to be geared toward recognizing the first warning signs of pneumonia and immediately seeking out trained health providers.

Apart from the adoption of recommendations for household care, the ethnographic studies resulted in a number of recommendations concerning the improvement of ARI case management and control:

- a) The national ARI control program should give priority to training health workers who are willing to remain in the communities themselves for prolonged periods of time. The mothers have less confidence in and consult less frequently with physicians who work in their areas on temporary assignment simply to fulfill the social service obligations of their studies. The mothers prefer health workers with several years of experience who also speak the local language. The health workers with in-depth information have a greater potential impact on the reduction of pneumonia-associated mortality than do the physicians themselves.
- b) For traditional midwives who have already been instructed in how to conduct a sanitary delivery, it would be useful and relatively simple to include an additional training component on signs of pneumonia and severe disease in children.
- c) Health workers should encourage mothers to seek out treatment from trained health worker at the first sign of so-called *saxra* or of other severe diseases attributed to “supernatural causes.” However, since the mothers tend to first seek out the counsel of traditional healers, the national ARI control program should explore the possibility of teaching traditional healers to refer children with signs of pneumonia or other severe disease to area health services.
- d) When communicating with the mothers, health workers need to learn to avoid using the term “ARI” as if it referred to a single disease. “ARI” refers to a broad group of diseases that the mothers may not consider a separate “class,” and the term in this context may lead to confusion.
- e) Health workers should teach mothers to look for signs of respiratory difficulty (accelerated breathing and retraction) to infer correctly when the children are severely sick.

The results of the ethnographic studies have been used to accommodate recommendations on household care, which health workers at the primary level of service have imparted through posters and flyers. Ethnographic findings were also described and integrated into an appendix of the health worker communication module Talking to Mothers, published under the PAHO/WHO ARI Control Programme. This module makes note of key ethnographic findings and their importance for effective communication with the mothers or caretakers of children with ARI.

V. CONCLUSION

Based on the principle that appropriate ARI case management is the only effective method for reducing mortality from pneumonia, the study reported in this chapter offers ample indication of why health programs need to take into account the conditions of the families of pediatric patients. That this sociocultural context will be present in all the families' dealings with the diseases in their homes and communities is something that health and communications professionals need to keep present when planning and executing activities to ensure attention will be sought for children at the first sign of pneumonia. Equally important is to identify the obstacles to the search for treatment by parents or other caregivers of sick children; cultural barriers can be overcome by everyone who participates in ARI program activities.

It is hoped that ethnographic studies will address and involve the health organizations and individual professionals who are concerned with the social and cultural contexts of their work. This study affords a clear example of how systematic ethnographic research can translate into concrete recommendations and support in overcoming social barriers to communications that too frequently arise between health workers and the communities that they serve.

VI. REFERENCES

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VII. APPENDICES

Table 1. Explanatory model for Quwari				
DISEASE	SEVERITY	SYMPTOMS	CAUSES	TREATMENT
<i>RAMARISU</i>	mild	<ul style="list-style-type: none"> • <i>acbbis acbbis ninbku</i> • <i>singanmanta qbyña mana sujetanchu</i> • <i>k'ajan</i> • <i>mana valorcitun kanchu</i> 	cold or catarrh contagion	herbal teas rubs baths pills
<i>PESTE</i>	mild/intermediate	<ul style="list-style-type: none"> • <i>k'ajan</i> • <i>rumarisu</i> • <i>kusiyanku</i> • <i>kunkitan k'aran</i> 	relapse carelessness	herbal teas rubs baths
<i>K'AJA UNQUY</i>	mild/intermediate	<ul style="list-style-type: none"> • <i>simisitun ch'akin</i> • <i>k'ajan</i> • <i>calorwan kanku</i> • <i>ansaqin</i> 	colds carelessness	herbal teas baths poultices fomentations
<i>CH'UJU UNQUY</i>	intermediate/severe	<ul style="list-style-type: none"> • <i>kunkitan k'aran</i> • <i>k'ajan</i> • <i>libre ansaqin</i> • <i>chu'uju apuran</i> • <i>calorwan kanku</i> 	mother's milk cold drinks <i>mancharisqa</i>	herbal teas rubs baths poultices
<i>COQUELUCHE</i>	severe	<ul style="list-style-type: none"> • <i>aswan ch'ujunku</i> • <i>libre ansaqin</i> • <i>kunkitan k'aran</i> • <i>tuta mana puñuy atinkuchu</i> • <i>tusisqanpi chi'iny arparin</i> 	colds <i>pachamama</i> <i>jap'iqá</i>	herbal teas poultices fomentations symbolic treatments
<i>T'UKU UJU</i>	severe	<ul style="list-style-type: none"> • <i>kullillata wijcb'ukun</i> • <i>kasqallanpi ujilata estrirakuna</i> • <i>k'ajan</i> • <i>ch'uju apuran</i> • <i>tusisqanpi ch'inyparin</i> 	<i>jap'iqá</i> <i>ayasqa</i> <i>unquy purin</i>	herbal teas symbolic treatments ritual baths
<i>CH'AKI UJU</i>	severe	<ul style="list-style-type: none"> • <i>q'iya bolasta thubhamun</i> 	colds	herbal teas

Table 2. Relationship to clinical signs	
CLINICAL SIGN	QUECHUA EXPRESSION
Fast breathing	<ul style="list-style-type: none"> • <i>ansaqin</i> (is panting) • <i>sayk'un</i> (tires) • <i>apurata saman</i> (fast breathing) • <i>wisitan apurata kuyun</i> (the little belly sinks and rises)
Difficult breathing	<ul style="list-style-type: none"> • <i>n'akayta saman</i> (barely can breathe) • <i>samaynin ch'usajchakun</i> (stops breathing)
Noisy breathing (wheezing, stridor)	<ul style="list-style-type: none"> • <i>arqbin</i> (sound of exhaustion) • <i>qburqusan</i> (sounds similar to hoarseness, but sharper) • <i>aras</i> (sound produced by obstruction from frothing in the mouth)

Table 3. Recommendations in Quechua for home-care of a child with cough

DANGER SIGNS	
If the child presents any of the following symptoms, take him or her to the physician immediately.	
<ul style="list-style-type: none"> • <i>Ñak'ayta saman</i> • <i>Apurata saman</i> • <i>Ansaqin</i> • <i>Samaynin ch'usajchakun</i> • <i>Sayk'un</i> • <i>Wisitan untuj kuyun</i> • <i>Wisitan apurata kuyun</i> • <i>Aras</i> • <i>Arqbin</i> • <i>Qburqusan</i> 	<ul style="list-style-type: none"> (barely can breathe) (fast breathing) (is panting) (stops breathing) (tires) (the little belly sinks and rises) (the little belly moves quickly) (sound produced by frothing in the mouth) (sound indicating exhaustion) (sound similar to hoarseness, only sharper)
If the mother believes the child has <i>ayasqa</i> , <i>saxra</i> , or <i>mancharisqa</i> , she should immediately take child to the physician and the <i>jampiri</i> (healer). Treatment by the two is preferable.	
FEEDING	
<ul style="list-style-type: none"> • Nurse more frequently; • Child over 4 or 6 months, should receive more liquids; e.g., herbal teas of eucalyptus, water-cress, or <i>muni</i>; • When child improves, he/she should receive additional food for a week; • Clean out child's nose with drops of milk, chamomile, and salt water; • NEVER use <i>tawañu</i> or <i>phusuqullu</i> to unclog the nose. 	
FOR COUGH	
<ul style="list-style-type: none"> • Give child herbal teas of eucalyptus and <i>muni</i>; • Use poultices and cataplasms, fomentations of water and eucalyptus leaves. 	
DANGER!	
<ul style="list-style-type: none"> • NEVER use kerosene or creosote to treat children. These materials are poisonous and very dangerous; • NEVER dilute mentholated ointments to give children or apply inside the nose. They may only be used as rubs. If ingested they are poisonous. 	

Table 4. Explanatory model for Jayuma Llagua				
DISEASE	SEVERITY	SYMPTOMS	CAUSES	TREATMENT
<i>PISTI</i>	mild	<ul style="list-style-type: none"> • <i>jach'is jach'is jurmanikiv</i> • <i>p'iqi usu</i> • <i>tumpa calentura</i> • <i>aliq ch'uxu</i> 	<ul style="list-style-type: none"> • cold • contagion 	<p>rubs baths</p>
<i>CH'UXU</i>	mild/intermediate	<ul style="list-style-type: none"> • <i>manqba calentura</i> • <i>mallq'a ch'ajantata</i> • <i>pisti</i> • <i>janiw ñuñxiti</i> • <i>janiw ch'uxusuñ puedxiti</i> 	<ul style="list-style-type: none"> • cold • contagion 	<p>herbal teas poultices baths</p>
<i>K'AJA CH'UXU</i>	severe	<ul style="list-style-type: none"> • <i>k'aj k'aj ch'uxsusa muraduki tuku</i> • <i>walsamaqi</i> • <i>walja manqba calentura</i> • <i>wilamp ch'uxuni</i> • <i>janiw sum samsuniñ puedxiti</i> 	<ul style="list-style-type: none"> • cold • contagion 	<p>rubs herbal teas baths</p>
<i>KUSTIPA</i>	severe	<ul style="list-style-type: none"> • <i>wilamp ch'uxuni</i> • <i>nasat wilaw sari</i> • <i>janiw sum ch'uxsunxiti</i> • <i>ratukiw samanix</i> 	<ul style="list-style-type: none"> • cold 	<p>herbal teas rubs ritual baths</p>
<i>SAXRA</i>	severe	<ul style="list-style-type: none"> • <i>lakapa muraduki tuku</i> • <i>manqba calentura</i> • <i>ratukiw samanix</i> • <i>pichupaw pbaraqi</i> • <i>ajayumpi</i> • <i>ch'uxña wich'uchu</i> 	<ul style="list-style-type: none"> • a spirit that comes to take the life of the child 	

Table 5. Relationship to clinical signs	
CLINICAL SIGN	AYMARA EXPRESSION
Fast breathing	<ul style="list-style-type: none">• <i>walsamaqi</i> (takes many breaths)• <i>ratukiw samanix</i> (fast breathing)
Difficult breathing	<ul style="list-style-type: none">• <i>janiw sum samsuniñ puedxiti</i> (can no longer breath well)• <i>pichupaw pharaq</i> (child's chest heaves)
Noisy breathing	<ul style="list-style-type: none">• <i>qburqbuski</i> (acute hoarseness)• <i>ayquski</i> (groaning and wheezing)• <i>aras</i> (wheezing with foaming)
Cyanosis	<ul style="list-style-type: none">• <i>lakapax muraduki tuku</i> (the mouth turns purple)

Table 6. Recommendations in Aymara for the home care of a child with cough

DANGER SIGNS	
<p>If the child presents with any of the following danger signs, he/she should be taken immediately to a physician:</p>	
<ul style="list-style-type: none"> • <i>Wak samaqi</i> • <i>Janiw sam sansuniñ puedxiti</i> • <i>Lakapax muraduki</i> • <i>Ratukiw samanix</i> • <i>Pichupaw pbaraqi</i> • <i>Janiw ñuñun munxiti</i> • <i>Qburqbuski</i> • <i>Ayquski</i> • <i>Aras</i> 	<ul style="list-style-type: none"> (breathes a lot) (can no longer breathe well) (mouth is purple or bruised) (fast breathing) (his/her chest “jumps”) (won’t nurse any more) (acute hoarseness) (grunting with wheezing) (wheezing with foaming)
<p>If a child suffers from <i>saxra</i>, a healer and a physician should be consulted immediately. It is preferable to seek treatment from both.</p>	
FEEDING	
<ul style="list-style-type: none"> • Nurse more frequently; • Child over 4 or 6 months, should receive more liquids; • When child improves, he/she should receive additional food for a week; • If <i>t’isi</i> (dry mucus) makes feeding difficult, clean out child’s nose with drops of milk, chamomile, and salt water. 	
FOR COUGH	
<ul style="list-style-type: none"> • Give child herbal teas using <i>wira wira</i>, eucalyptus, <i>chuyi kaylla</i>, barley grain, and <i>salwiya</i>; • “Cure” the cough with poultices and cataplasms made from <i>lik’imp ch’iyar t’arwampi</i> and <i>untu sinsil ch’iyar t’arwampi</i>. 	
DANGER!	
<ul style="list-style-type: none"> • NEVER use kerosene or creosote to treat children. These materials are poisonous and very dangerous. • NEVER dilute mentholated ointments to give children or apply inside the nose. They may be used only as rubs. If ingested or rubbed inside the nose they are poisonous. 	

Table 7. Explanatory model for the city of El Alto de la Paz

DISEASE	SEVERITY	SYMPTOMS	CAUSES	TREATMENT
COUGH	severe intermediate	<ul style="list-style-type: none"> audible throat (snoring) inflamed throat spitting phlegm stopped-up throat sunken chest 	<ul style="list-style-type: none"> breath or exposure sudden chill excessive exposure to sun drink or play in cold or non-boiled water eat ice cream or orange 	herbal teas baths and fomentations cataplasm ointments and injections syrups and pills
TEMPERATURE	severe intermediate	<ul style="list-style-type: none"> temperature burning breath strong breath heart is jumping it is as if he or she were swallowing air 	<ul style="list-style-type: none"> <i>saxra</i> (evil being) fright or <i>ajayu</i> (spirit) cold cough and gripe 	herbal teas baths and aromatic smoke suppositories pills poultices
<i>K'AJA CHUXU</i>	severe	<ul style="list-style-type: none"> suffers from <i>arasa</i> (foamy saliva that appears with wheezing) silenced by cough turns purple and strong cough <i>paletiljata</i> (sunken chest) 	<ul style="list-style-type: none"> from cold the disease “walks” cough left untreated too long eat orange or banana 	herbal teas poultices and baths rubs syrups and injections

Table 7. (continued)				
DISEASE	SEVERITY	SYMPTOMS	CAUSES	TREATMENT
COUGH WITH GRIPPE	severe	<ul style="list-style-type: none"> • has mucus • cough • stuffy nose or <i>t'isi</i> (dried mucus) 	<ul style="list-style-type: none"> • cold • playing in cold water • contagion • head exposed • bath in cold water in open air 	herbal teas vaporization baths poultices tablets suppositories ointments
WHOOPIING COUGH (<i>COQUELUCHE</i>)	severe	<ul style="list-style-type: none"> • his/her little chest hurts • is vomiting • won't breathe • <i>ayquski</i> (groaning with constant pain) 	<ul style="list-style-type: none"> • cough not cured in time • play in water • heat • as if relapsed 	herbal teas rubs fomentations syrups injections ointments

Table 8. Relationship to clinical signs	
CLINICAL SIGN	EXPRESSION USED BY THE MOTHERS IN EL ALTO DE LA PAZ
Accelerated breathing	<ul style="list-style-type: none"> • breathes hard or a lot • <i>samaqiskiw</i> (is breathing a lot) • is panting • heart or little belly is throbbing strongly • breathes very tired
Difficult breathing	<ul style="list-style-type: none"> • stuffy nose or <i>t'isi</i> (dried mucus) • blocked throat • muffled cough inside • cannot breathe well • as if swallowing air
Noisy breathing	<ul style="list-style-type: none"> • the throat sounds like the lungs • <i>arasa</i> (foaming from the mouth) • <i>ayquski</i> (groaning with constant pain) • <i>qbataqi</i> (onomatopoeia for sound coming from the throat) • <i>qbuthuqi</i> (sound that occurs with thick saliva or phlegm) • breathes with noise in the throat
Indrawing	<ul style="list-style-type: none"> • <i>jaqukipstata</i> (jumping heart or stomach) • heart is jumping or throbbing • his/her little chest is moving • <i>pbatbanka sillaranti</i> (his/her little belly sinks) • <i>paletilljata</i> (sunken sternum) • sunken chest

Table 9. Recommendations for home care of children with cough in the city El Alto La Paz

DANGER SIGNS	
A child presenting any of the following symptoms should be taken immediately to the physician:	
<ul style="list-style-type: none"> • Breathes a lot • Breathes with the belly or chest • <i>Samaqiskia</i> (is breathing strongly) • Breathes with fatigue • Throat is blocked • Smothered cough • Cannot breathe through throat • As if swallowing the air • The throat makes sounds like the lungs • <i>Arasa</i> • <i>Qbathaqi</i> • <i>Qbutbuti</i> • Breathing with sound from throat • <i>Jaqukipstata</i> • Heart is jumping or throbbing a lot • <i>Phatbanka sillaranti</i> • <i>Palettiljata</i> • Sunken chest 	<ul style="list-style-type: none"> (frothing accompanying wheezing) (onomatopoeia for throat sounds) (sound accompanying thick saliva) (bouncing heart or stomach) (sunken belly) (sunken sternum)
If the condition of a child with cough worsens and presents <i>arasa</i> , <i>qbututi</i> , or <i>qbatati</i> or the throat makes noises, the child should be taken to a health center while there is still time for physicians to cure him or her.	
FEEDING	
<ul style="list-style-type: none"> • Feed the child; • Give child more to drink; • Administer a reliable remedy to soothe the throat and alleviate the cough. 	
FOR COUGH	
<ul style="list-style-type: none"> • If the child has a sore or burning throat, apply poultices of eucalyptus, rub on mentisan or chicken fat; • If the child has cough, <i>k'aja ch'uxu</i>, or whooping cough, give him or her eucalyptus tea or herbal teas of <i>wira wira</i> or <i>chbuqi kaylla</i> with honey every day until the disease has subsided; • When children are sick with cough, temperature and <i>k'aja ch'uxu</i>, they should be given liquids to alleviate thirst, such as herbal teas made from chamomile, linseed, cinnamon, or eucalyptus. 	
DANGER!	
If the throat is blocked or swollen, avoid the following treatments:	
<ul style="list-style-type: none"> • Do not have children ingest mentisan; • Do not use motor oil for rubs; • Do not apply kerosene rubs; • Do not bathe in alcohol; • Menthol ointments ingested or rubbed in the nose are poisonous. 	

